

Figure 1 I/O ENGINE

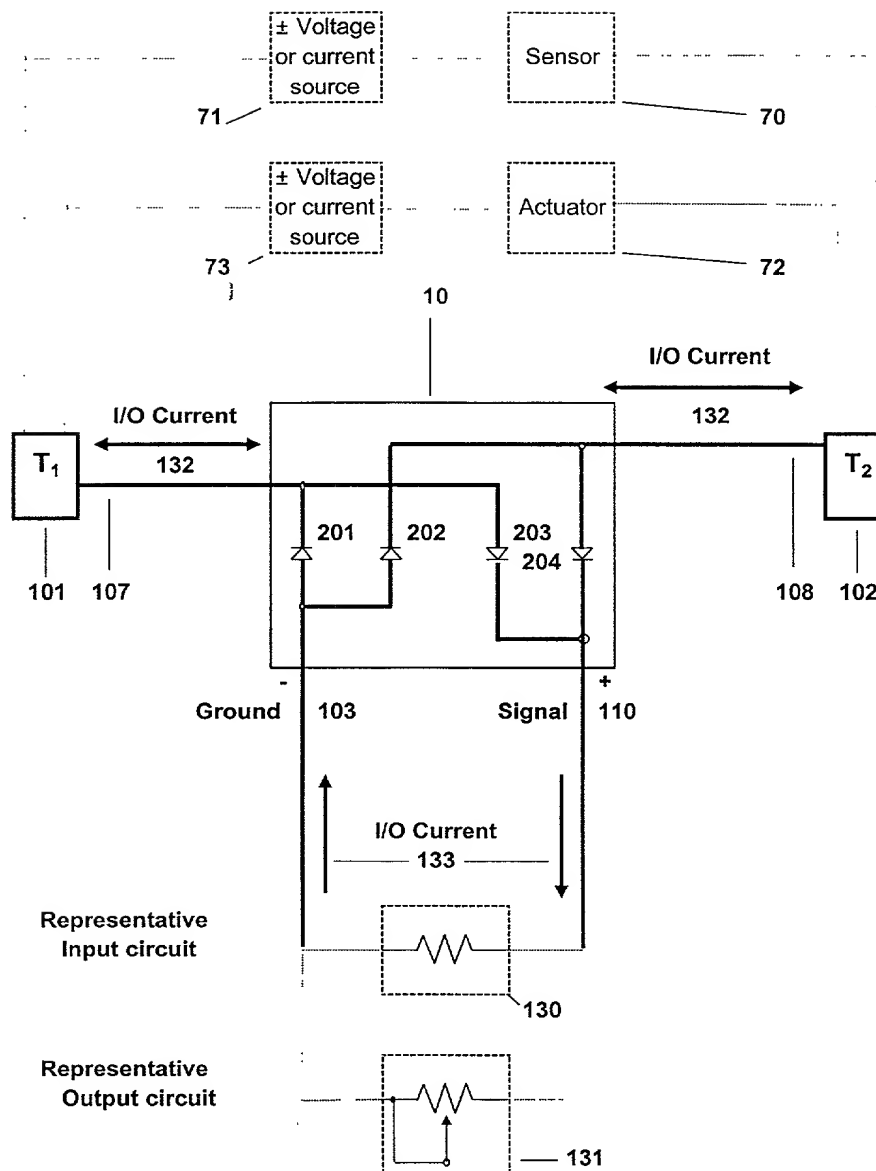


Figure 2 Senso-Actuator Connections

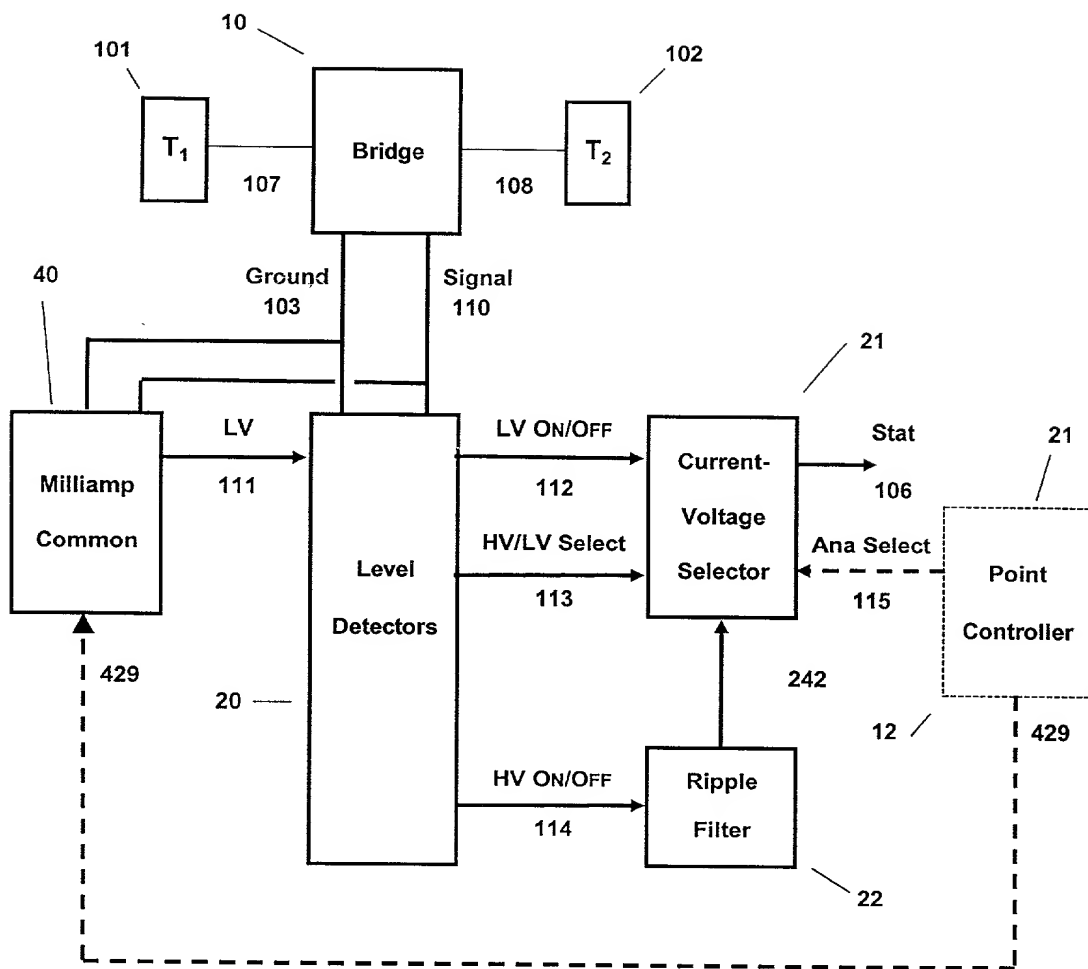


Figure 3 Mode 1 Digital (ON/OFF) Input

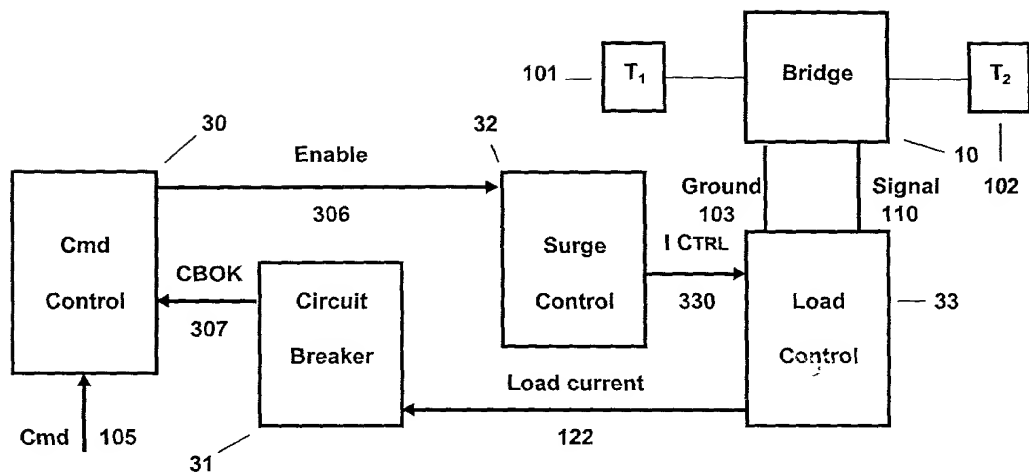


Figure 4 Mode 2 Digital (ON/OFF) Output

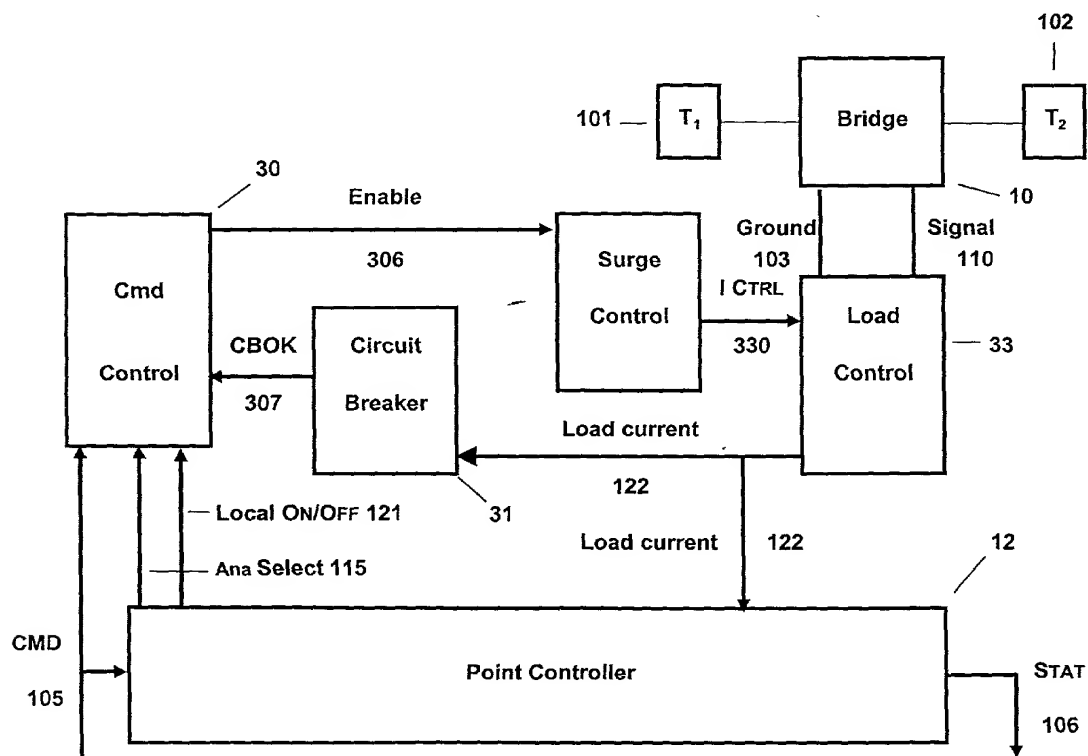


Figure 5 Mode 3 Digital Output & Load Current

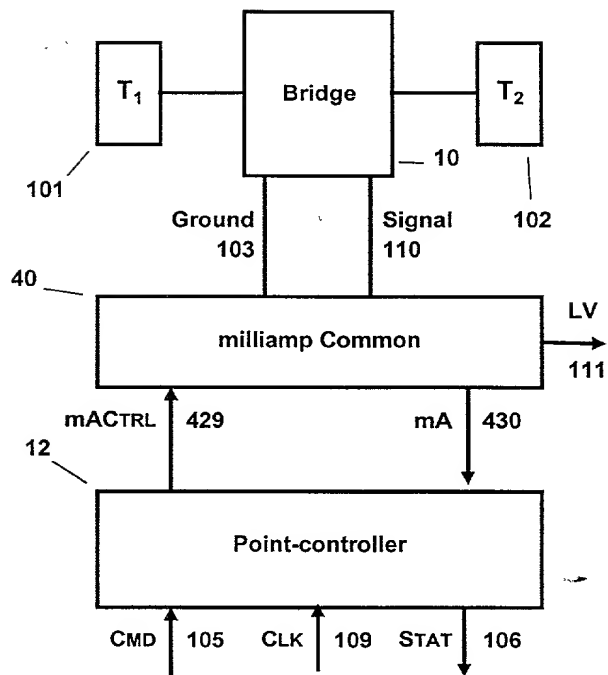


Figure 6. Modes 4 & 5 mA Functions

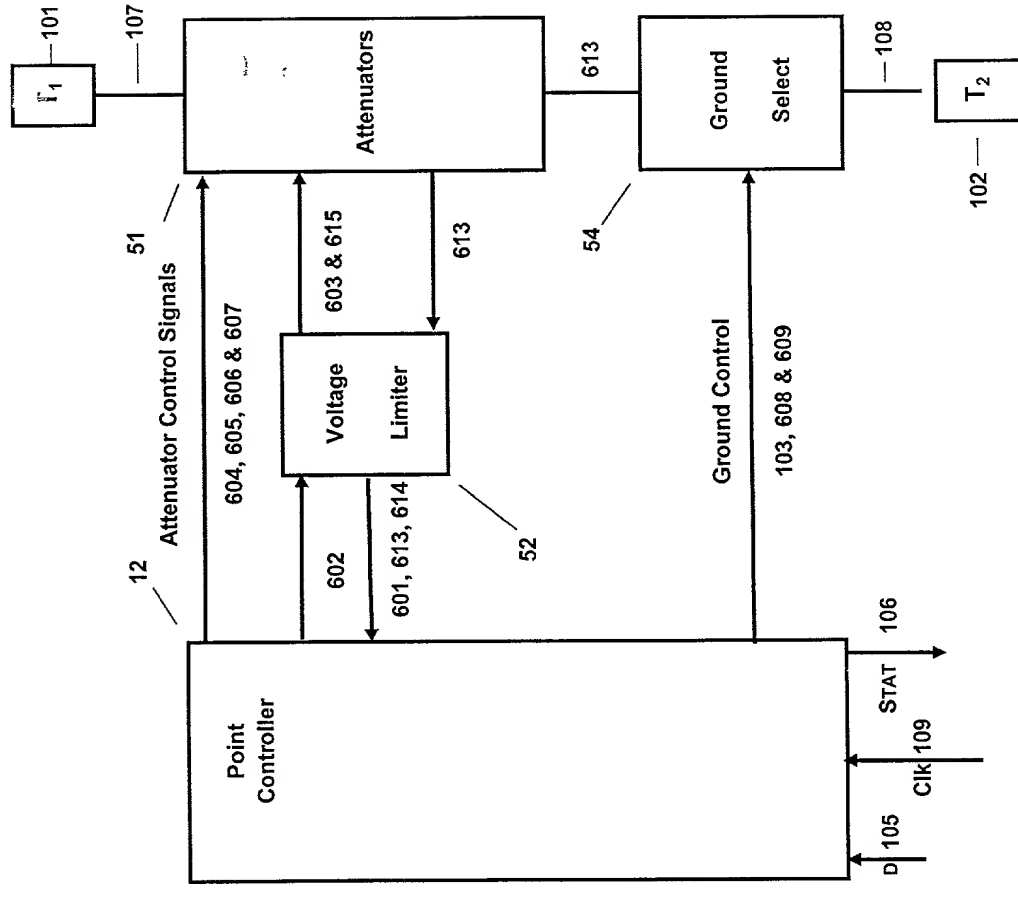


Figure 7 Mode 6: Analog Voltage Input

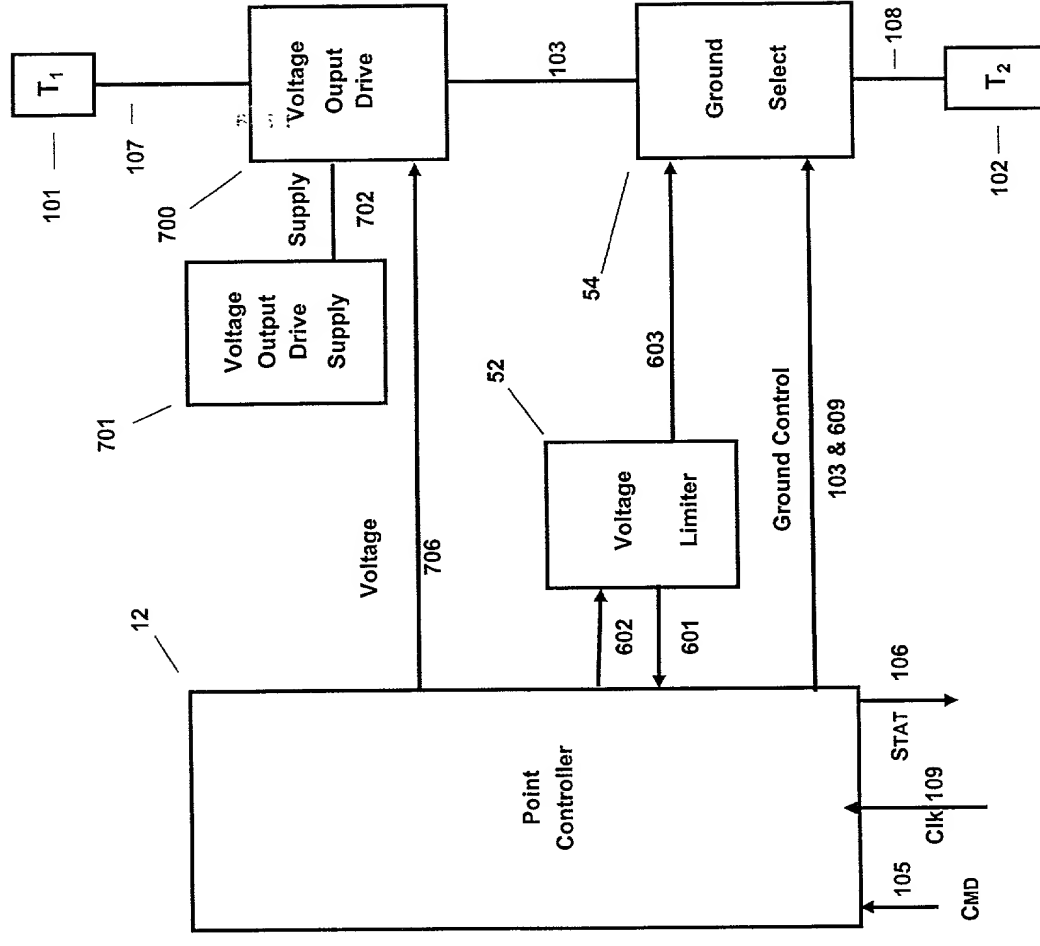
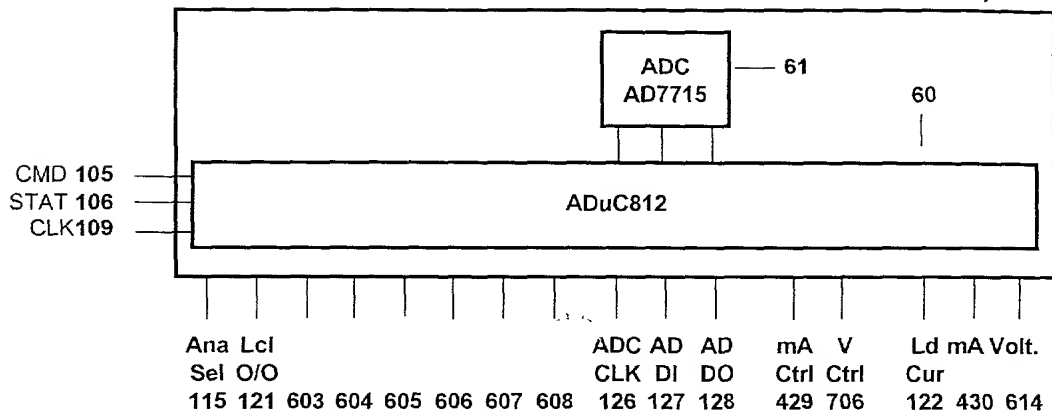


Figure 8 Mode 7: Analog Voltage Output

Figure 9 Point-Controller

12



| Mode REF # I/O | | Control Lines | | | | | | | | | | | DACs | | ADCs | | |
|----------------------|-----------------|---------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-------|-------|------|-----|-----|
| | | 115 | 121 | 603 | 604 | 605 | 606 | 607 | 608 | 126 | 127 | 128 | 429 | 706 | 122 | 430 | 614 |
| 1 | I D ON/OFF | H | T | L | L | L | L | L | L | T | T | T | T | T | - | - | - |
| 2 | O D ON/OFF | H | T | L | L | L | L | L | L | T | T | T | T | T | - | - | - |
| 3 | O D,A Amps | L | H/L | L | L | L | L | L | L | T | T | T | T | T | Amps | - | - |
| 4 | I A mAmp | L | L | L | L | L | L | L | L | T | T | T | 5 | T | - | mA | - |
| 5 | O A mAmp | L | L | L | L | L | L | L | L | T | T | T | 0-2.5 | T | - | mA | - |
| 6 a | I A Volts LV dc | L | L | L | L | H | L | H | L | CLK | DI | DO | T | T | - | - | V |
| 6 b | I A Volts HV dc | L | L | L | H | L | H | H | L | CLK | DI | DO | T | T | - | - | V |
| 6 c | I A Volts HV ac | L | L | H | L | L | H | H | H | CLK | DI | DO | T | T | - | - | V |
| 7 | O A Volts | L | L | L | L | H | L | H | H | CLK | DI | DO | T | 0-2.5 | - | - | V |

L = low H = High T = Tri-state

Figure 10 Mode Control Table

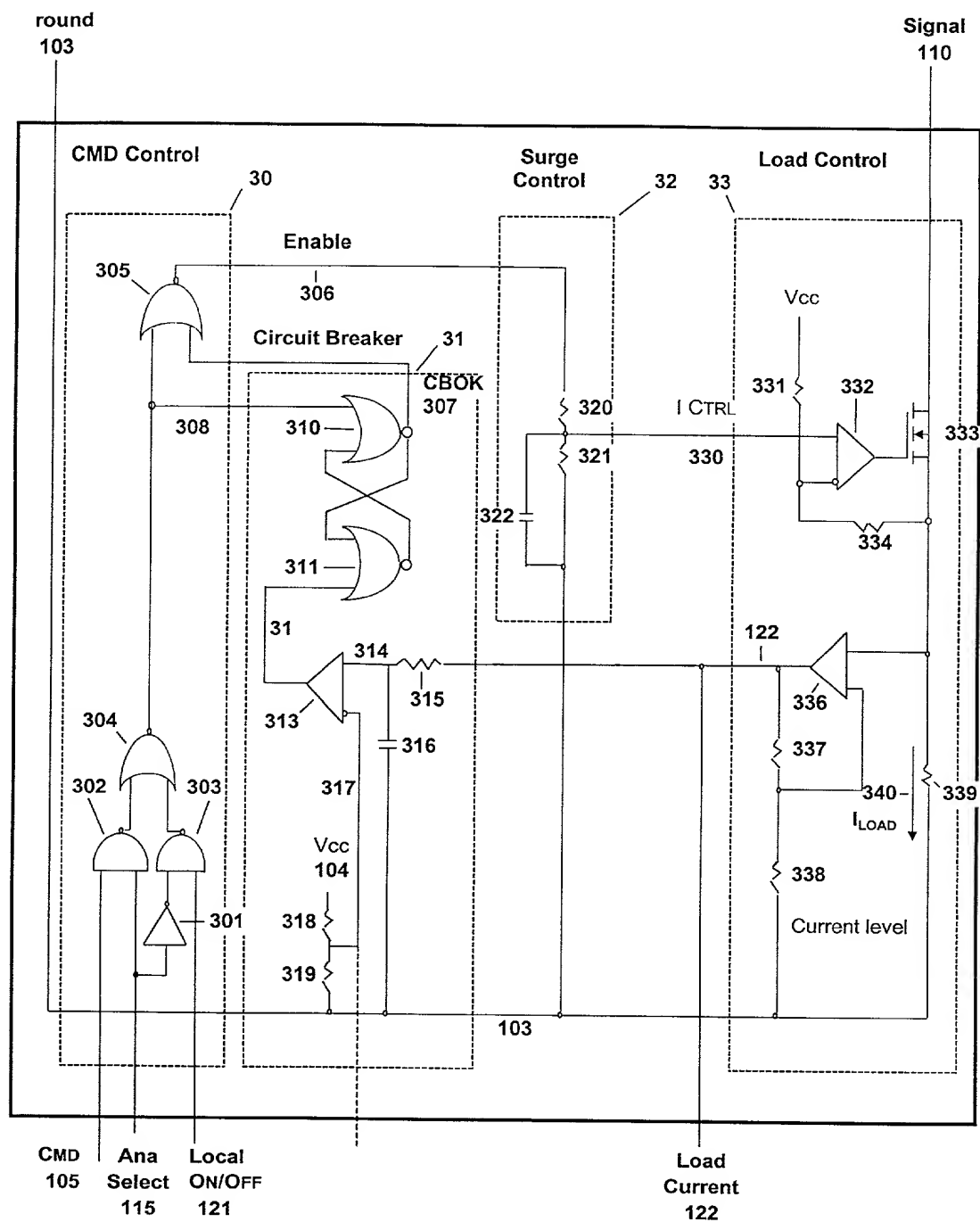


Figure 12 Mode2: Digital (ON/OFF) Output; Mode 3: Load Current

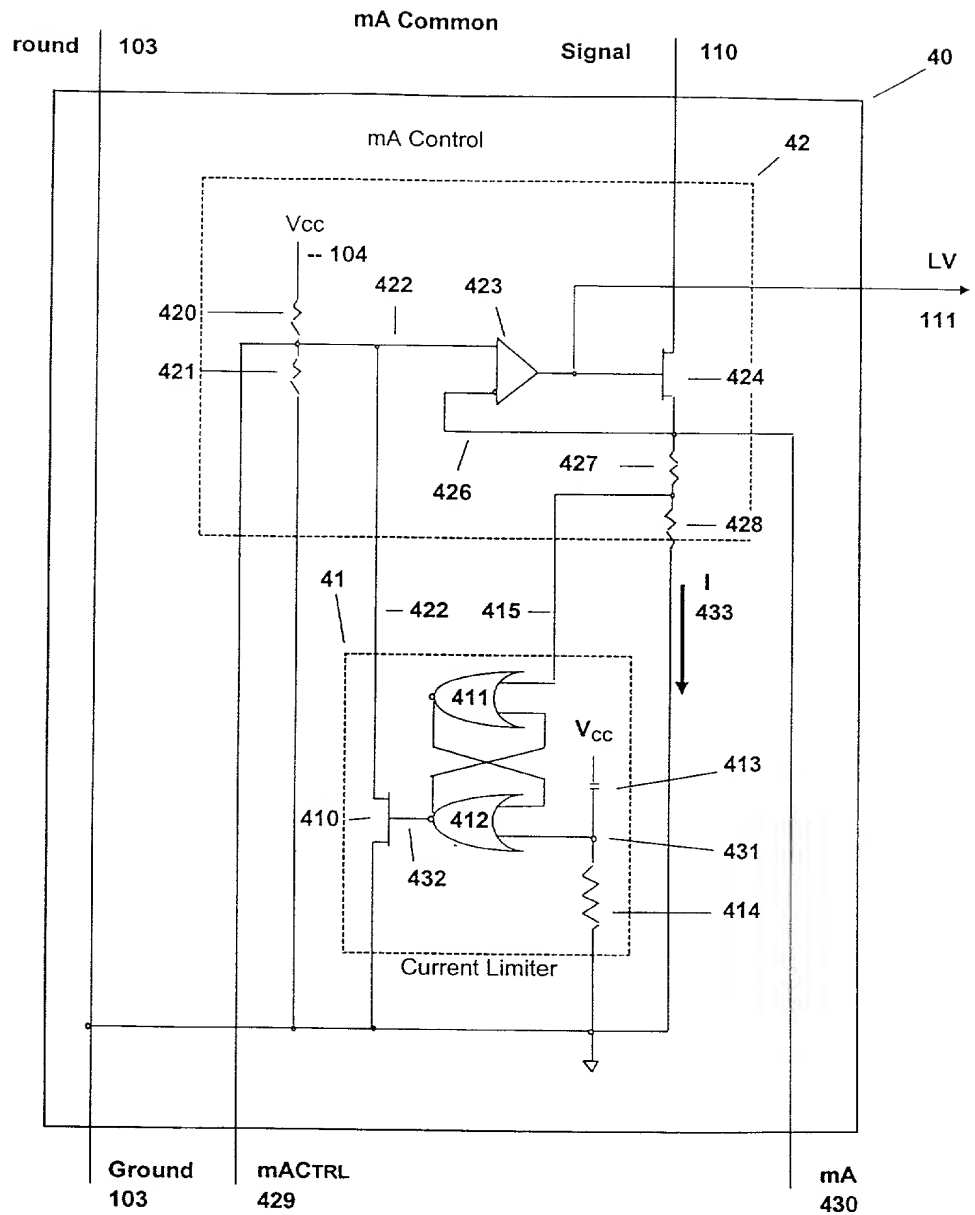


Figure 13 Modes 4 & 5: mA Common

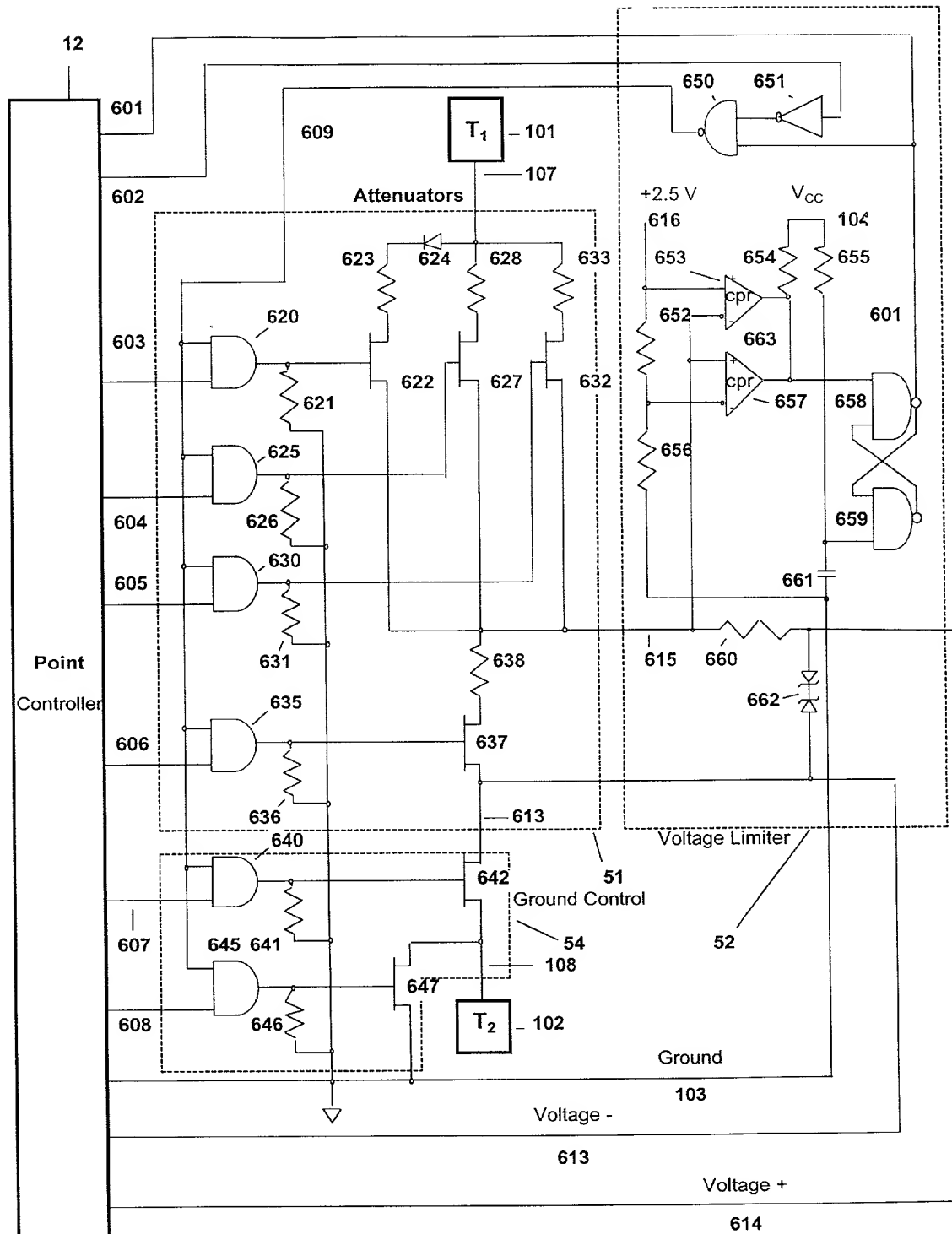


Figure 14 Mode 6: Analog Voltage In

The diagram illustrates a power control system for a laser diode. A **Point Controller** (12) provides control signals to several components:

- Voltage Limiter** (601): Receives signal 601 and outputs 602 to the **Voltage Output Drive Supply** (701).
- Voltage Output Drive Supply** (701): Receives signal 603 and provides power to the **Voltage Output Drive** (700).
- Voltage Output Drive** (700): A dashed box containing an operational amplifier (703), a diode (704), and resistors (705, 707, 708, 709). It receives a **V CTRL** signal (706) and provides a **Voltage Output** signal (702) to the **Ground Control** (103).
- Ground Control** (103): A dashed box containing an AND gate (645) and a resistor (646). It receives the **Voltage Output** signal (702) and a **Ground** signal (609) from the Point Controller. Its output (647) is connected to the **Ground** terminal (108) of the laser diode.

The laser diode (101) is represented by a box with terminals **T₁** (101) and **T₂** (102). It is also connected to a **Ground** terminal (103) and a **Ground Control** terminal (108). A **Temperature** sensor (52) is connected to the **Ground Control** terminal (108). A **Temperature** sensor (54) is connected to the **Ground Control** terminal (108) and the **Ground** terminal (103).

Figure {15} Mode 7: Analog Voltage Output

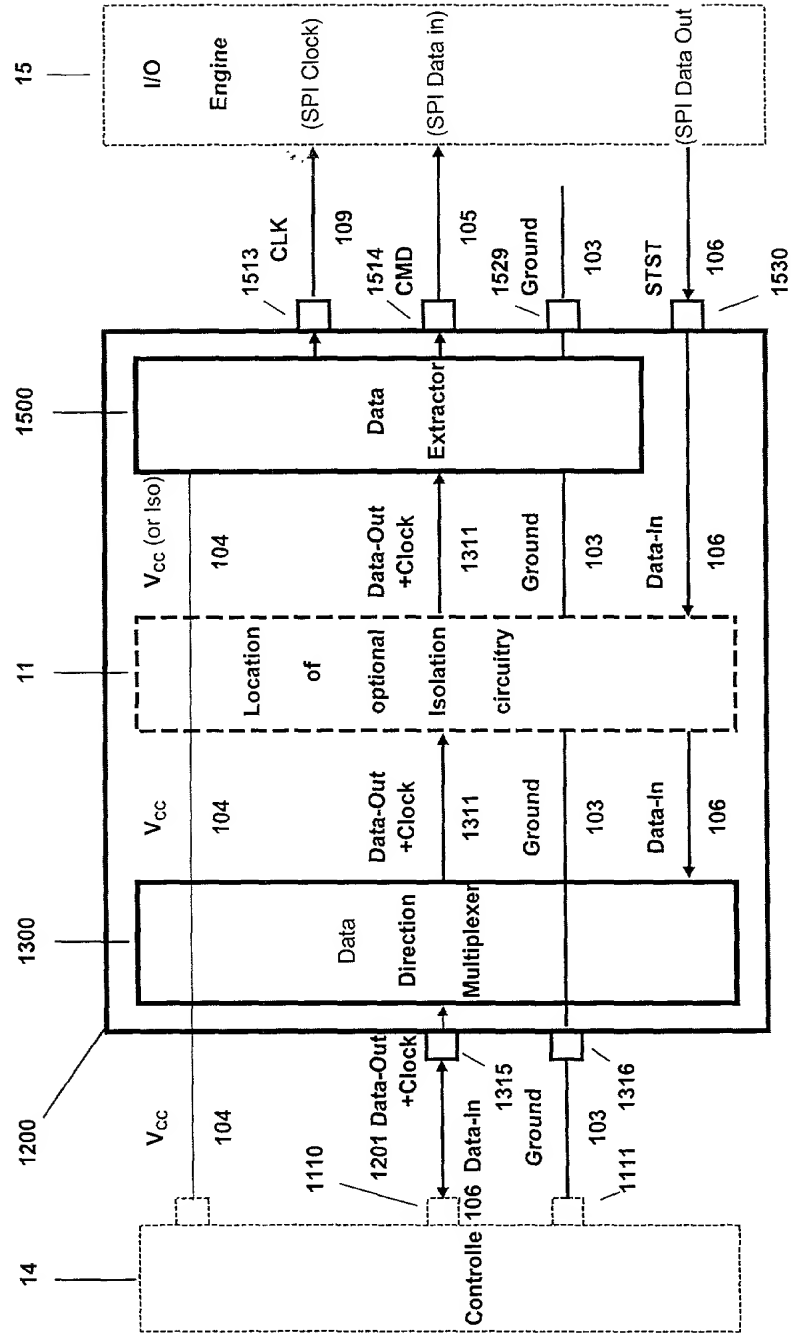


Figure 16 Monoline Serial Interface (SPI)